ARMY TM 11-5805-553-12

NAVY NAVELEX 0967-466-0010

OPERATOR'S AND ORGANIZATIONAL

MAINTENANCE MANUAL

INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS

CONVERTERS,

TELEPHONE SIGNAL

CV-1918A(V)1/G (NSN 5805-00-504-9103)
CV-1918A(V)2/G (NSN 5805-00-504-9107)
CV-1918A(V)3/G (NSN 5805-00-137-7674)

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DEPARTMENTS OF THE ARMY AND THE NAVY

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CHANGE
No. 1

DEPARTMENTS OF THE ARMY
AND THE NAVY
WASHINGTON, D.C., *16 September 1977*

Operator's and Organizational Maintenance Manual Including Repair Parts and Special Tools Lists Converters, Telephone Signal CV–1918A(V)1/G (NSN 5805–00–504–9103) CV–1918A(V)2/G (NSN 5805–00–504–9107) CV–1918A(V)3/G (NSN 5805–00–137–7674)

TM 11–5805–553–12/NAVELEX 0967–466–0010, 20 January 1975, is changed as follows:

1. The title of the manual is changed as shown above.
2. New or changed material in text is indicated by a vertical bar in the margin.
3. Changes in illustrations are indicated by a pointing hand.
4. Remove and insert pages as indicated in the page list below:

Remove pages	*Insert pages*
i and ii	i and ii
1–0	1–0
1–1 through 1–3	1–1 through 1–3/(1–4 blank)
2–1 through 2–8	2–1 through 2–7
3–1 through 3–4	3–1 through 3–4
4–1 and 4–2	4–1 and 4–2
5–1 and 5–2	5–1 and 5–2
A–1	A–1/(A–2 blank)

5. File this change sheet in front of the publication for reference purposes.

TECHNICAL MANUAL
No. 11–5805–553–12
TECHNICAL MANUAL
NAVELEX 0967–466–0011

DEPARTMENTS OF THE ARMY
AND THE NAVY
WASHINGTON, DC, *20 January 1975*

Operator's and Organizational Maintenance Manual Including Repair Parts and Special Tools Lists CONVERTERS, TELEPHONE SIGNAL CV–1918A(V)1/G (NSN 5805–00–504–9103) CV–1918A(V)2/G (NSN 5805–00–504–9107) CV–1918A(V)3/G (NSN 5805–00–137–7674)

Basic Manual Current as of 18 September 1974
Change No. 1 is Current as of 11 May 1977

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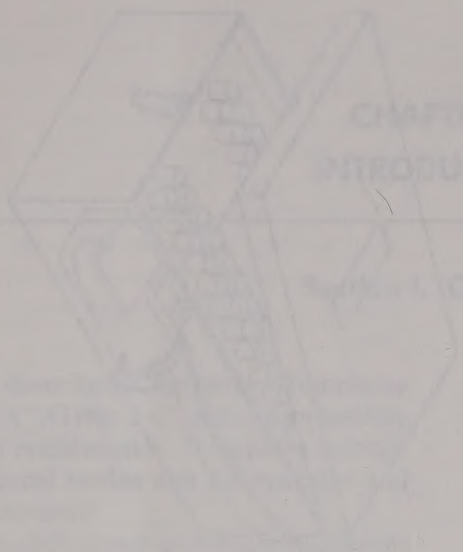

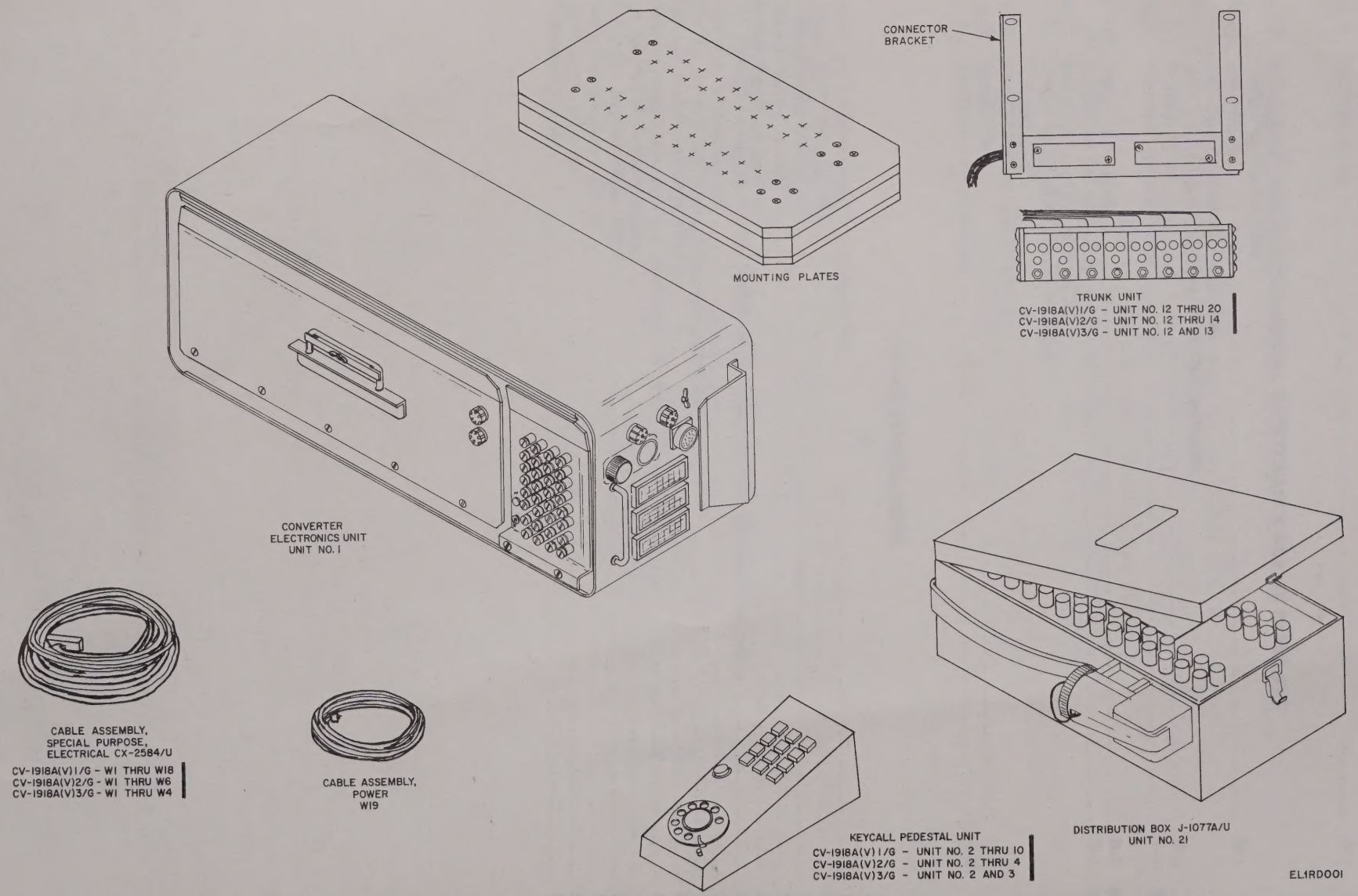
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EL1RD001

Figure 1-1. Converter, Telephone Signal CV-1918A(V)(*)/G.

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1–1. Scope

a. This manual describes Converter, Telephone Signal CV–1918A(V)(*)/G (fig. 1–1), and covers installation, operation, and maintenance. It includes instructions for all operational modes and for operator and organizational maintenance.

b. The complete technical manual for this equipment includes DMWR 11–5805–553.

c. Throughout this manual, Distribution Box J–1077 (*)/U indicates Distribution Box J–1077/U and Distribution Box J–1077A/U.

1–2. Indexes of Publications

a. DA Pam 310–4. Refer to the latest issue of DA Pam 310–4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. DA Pam 310–7. Refer to DA Pam 310–7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

1–3. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38–750 (Army). Navy personnel will report maintenance performed utilizing the Maintenance Data Collection Subsystem (MDCS) in accordance with OPNAVINST 4790.2, Vol 3 and unsatisfactory material/conditions (UR submissions) in accordance with OPNAVINST 4790.2, Vol 2, chapter 17.

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Packaging Improvement Report) as prescribed in AR 700–58/NAVSUPINST 4030.29/AFR 71–13/MCO P4030.29A, and DSAR 4145.8.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55–38/NAVSUPINST 4610.33A/AFR 75–18/MCO P4610.19B and DSAR 4500.15.

1–4. Reporting of Errors

a. The reporting of errors, omissions, and recommendations for improving this manual by the individual user is encouraged. Army reports should be submitted on DA Form 2028, Recommended Changes to Publications and Blank Forms, and forwarded direct to Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, NJ 07703.

b. Navy personnel should mail comments direct to: Commander Naval Electronics Systems Command, Code 4903, Washington, D.C. 20360.

c. In either case, a reply will be furnished direct to you.

1–4.1. Reporting Equipment Improvement Recommendations (EIR)

a. Army. EIR's will be prepared using DA Form 2407, Maintenance Request. Instructions for preparing EIR's are provided in TM 38–750, The Army Maintenance Management System. EIR's should be mailed direct to Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, NJ 07703. A reply will be furnished direct to you.

b. Navy. Reporting Equipment Improvement Recommendations (EIR). Navy personnel are encouraged to submit EIR's through their local Beneficial Suggestion Program.

1–5. Administrative Storage

Administrative storage of equipment issued to and used by Army activities shall be in accordance with TM 740–90–1.

1–6. Destruction of Army Electronics Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750–244–2.

Section II. DESCRIPTION AND DATA

1–7. Purpose and Use
(fig. 1–2)

a. The CV–1918A(V)1/G is an eight-channel transistorized, two/four-wire telephone signal converter used to provide interface between Automatic Telephone Central Office AN/TTC–38(V)(*) (TM 11–5805–628–12); Manual Telephone Central Office AN/MTC–1 (TM 11–5805–284–15); Manual Telephone Central Office AN/MTC–9 (TM 1–5805–288–15); or Manual Telephone Central Office AN/TTC–23 (TM 11–5805–391–15).

b. The CV–1918A(V)2/G converts the two wire lines of the SB–249/TTC (part of AN/MTC–1 and AN/MTC–9) or SB–1398/GTA–14(V) (part of AN/TTC–23) into four wire lines (eight send pair, eight receive pair) required for operation with the AN/TTC–38(V)(*) automatic switchboard.

c. The CV–1918A(V)3/G detects incoming calls or release (tone signals from the automatic switchboard) and alerts the manual switchboard operator of a request for service. The CV–1918A(V)/G also establishes the connection between the manual and automatic switchboard and provides direct (touch tone) dialing into the automatic switchboard.

1–8. Description

a. General. The CV–1918A(V)1/G includes one converter electronics unit, nine trunk units, nine keycall pedestal units, one Distribution Box J–1077(*)/U, and cable assemblies. Each of these will be referenced in this manual by its simple name such as converter, trunk unit, etc. The CV–1918A(V)2/G includes one converter electronic unit, three trunk units, three keycall pedestal units, one Distribution Box J–1077(*)/U and cable assemblies. The CV–1918A(V)3/G includes one converter electronics unit, two trunk units, two keycall pedestal units, one Distribution Box J–1077(*)/U, and cable assemblies.

b. Converter. The converter includes eight channel circuits and one common circuit on a card cage type chassis in an outer case. Each channel circuit has two printed wiring assemblies, one channel logic and one channel analog. The common circuit uses a tone generator printed wiring assembly and a common regulator printed wiring assembly. The front panel includes connectors, fuses, a variable resistor, and alarm. A side panel includes the lightning arresters, a switch, and an indicator.

c. Trunk Unit. Each trunk unit has eight channel connection circuits. Each circuit includes a white service request (SR) indicator, a green busy (BY) indicator, a release pushbutton switch, and a phone jack. The trunk unit interfaces mechanically and electrically with the switchboard operator's console.

d. Keycall Pedestal Unit. Each keycall pedestal unit includes a keysender, Dial TA–45/GT, and a SEIZE pushbutton switch. It interfaces mechanically and electrically with the switchboard operator's console.

e. Universal Mounting Plates. Universal mounting plates are provided for each CV–1918A(*)/G to facilitate installation in various shelters. The mounting plates are disignated left and right as viewed from the cover side of the converter. The mounting plates are ½ inch thick, aluminum and weigh approximately 2 pounds.

1–9. System Application

The CV–1918A(V)/G provides interface between the AN/TTC–38(V)(*) and the SB–249/TTC or SB–1398/GTA–14(V) for eight channels. Figure 1–2 is a block diagram that illustrates a typical application. Refer to TM 11–5805–628–12 for additional details.

1–10. Tabulated Data

Circuit capacity	8 channel
Transmission range	2 miles
Transmission loss	5 db maximum
Transmission line impedance	600 ohms
Voice frequency range	300 Hz to 3500 Hz
Input signal frequency:	
Release	2600 Hz
Seize	2250 Hz
Acknowledge	570 Hz
Input signal levels	−30 dbm
Crosstalk attenuation	50 db minimum
Operating power:	
Internal (regulated)	−6 vdc and −3 vdc
External	−48 vdc
Operating temperature	0° to +125°F.
Storage temperature	−70° to +160°F.
Relative humidity:	
Up to +85°F	100%
+85° to +120°F	85°F dew point
Above +120°F	5%
Operating altitude above sea level	Up to 10,000 ft
Storage altitude above sea level	Up to 50,000 ft
Converter output frequencies ±1.3%:	
Release/Duration	2600 Hz/3 to 10 seconds maximum
Seize	2250 Hz
Acknowledge	570 Hz
Ringback	425 Hz interrputed
DTMF keysend signals:	
1	697+1209 Hz
2	697 + 1336 Hz
3	697 +1477 Hz
4	770+ 1209 Hz
5	770+ 1336 Hz
6	770+ 1477 Hz
7	852+1209 Hz
8	852+ 1336 Hz
9	852 + 1477 Hz
0	941 + 1336 Hz
C	941 + 1477 Hz
R	941 + 1209 Hz

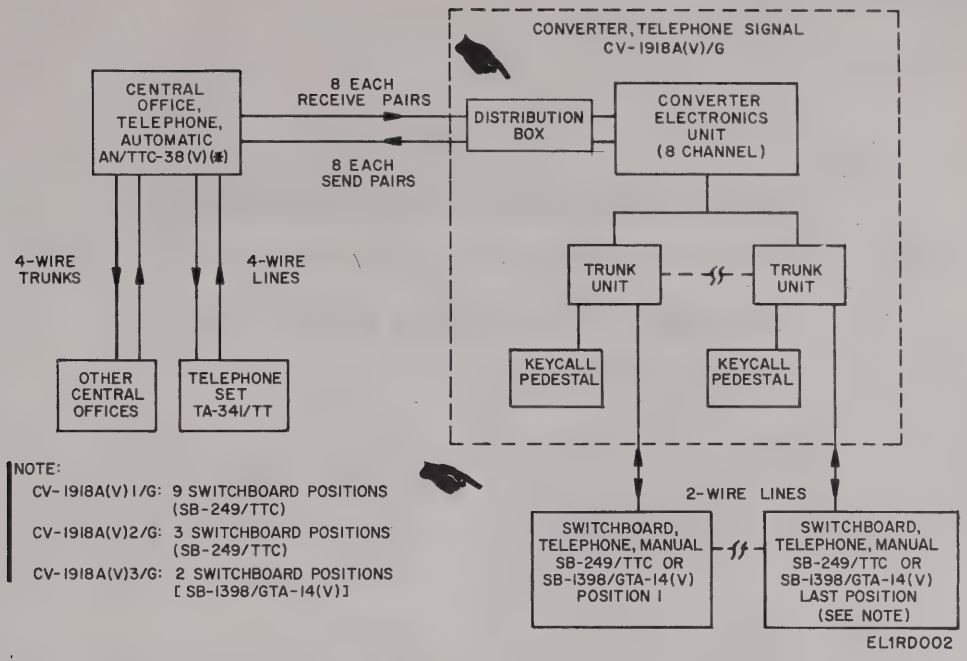


Figure 1–2. Typical system block diagram.

1–11. Items Comprising an Operable Equipment

NSN	Item	Quantity	Dimensions (in.)			Weight (lbs.)
			Height	Depth	Width	
5805–00–504–9103	Converter, Telephone Signal CV–1918A(V)1/G consisting of:					
	Cable assembly, power	1	----	50′	----	5
5895–00–284–6353	Cable Assembly, Special Purpose, Electrical CX–2584/U	18	----	8′7″	----	2.5 ea
	Converter electronics	1	8.5	27	9.75	40
6110–00–985–7584	Distribution Box J–1077(*)/U	1	5.5	15	15	15
	Trunk unit	9	2.5	12	11	4.5 ea
	Keycall pedestal unit	9	3.25	8.875	3.375	2.5 ea
	Plates, universal mounting	2	1.5	8.26	8′7″	2
5805–00–504–9107	Converter, Telephone Signal CV-1918A(V)2/G consisting of:					
	Cable assembly, power	1	----	50′	----	5
5895–00–284–6353	Cable Assembly, Special Purpose, Electrical CX–2584/U	6	----	8′7″	----	2.5 ea
	Converter electronics unit	1	8.5	27	9.75	40
6110–00–985–7574	Distribution Box J–1077(*)/U	1	5.5	15	15	15
	Trunk unit	3	2.5	12	11	4.5 ea
	Keycall pedestal unit	3	3.25	8.875	3.375	2.5 ea
	Plates, universal mounting	2	1.5	8.26	1.5	2
5805–00–137–7674	Converter, Telephone Signal CV–1918A(V)3/G consisting of:					
	Cable assembly, power	1	----	50′	----	5
5895–00–284–6353	Cable Assembly, Special Purpose, Electrical CX–2584/U	4	----	----	8′7″	2.5 ea
	Converter electronics unit	1	8.5	27	9.75	40
6110–00–985–574	Distribution Box J–077(*)/U	1	5.5	15	15	15
	Trunk unit	2	2.5	12	11	4.5 ea
	Keycall pedestal unit	2	3.25	8.875	3.375	2.5 ea
	Plate, universal mounting	2	1.5	8.26	1.5	2

CHAPTER 2
SERVICE UPON RECEIPT AND INSTALLATION

Section I. SERVICE UPON RECEIPT OF MATERIEL

2–1. Unpacking
(fig. 2–1)

The CV–1918A(V)/G components are packed in Kimpac protective material and placed in separate cardboard cartons. The cartons are then assembled in a wooden box. The wooden box is secured with metal straps. No special unpacking sequence or procedures are required to unpack the equipment.

a. Sheet 1 shows the packing used for the keycall pedestal, the trunk unit, the cable assemblies, and the converter electronic unit. Miscellaneous hardware is packed with its associated component. The packing used for the mounting plates and the distribution box is illustrated on sheets 2 and 3.

b. Sheet 2 illustrates how all the cartons are assembled in the wooden box for the CV–1918A(V)1/G.

c. Sheet 3 illustrates how all the cartons are assembled in the wooden box for the CV–1918A(V)2/G or CV–1918A(V)3/G.

2–2. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6 (para 1–3*b*).

b. Check to see that the equipment is complete as listed on the packing slip. If a packing slip is not available, check the equipment against the items comprising an operable equipment (para 1–11). Report all discrepancies in accordance with TM 38–750. The equipment should be placed in service, even though a minor assembly or part that does not affect proper functioning is missing.

c. Check to see whether the equipment has been modified. If the equipment has been modified, the MWO number will appear on the front panel, near the nomenclature plate. Check also to see whether all MWO's current at the time the equipment is placed in use, have been applied.

NOTE

Current MWO's applicable to the equipment are listed in DA Pam 310–7.

d. Check the latest issue of DA Pam 310–4 and its latest changes to see whether you have the latest editions of all applicable maintenance literature.

e. For dimensions, weights, and volume of packaged items, see SB 700–20.

Section II. INSTALLATION INSTRUCTIONS

2–3. Installing Trunk Unit and Keycall Pedestal Unit
(fig. 2–2)

One trunk unit and one keycall pedestal unit are installed at each operator's position of the SB–249/TTC or SB–1398/GTA–14(V). The procedures for all positions are identical. Refer to applicable MWO for assemblage or facility peculiar wiring data.

a. Roll up protective curtain to gain access to rear panel of SB–249/TTC or SB–1398/GTA–14(V).

b. Remove half disk fasteners and two blank panel spacers next to magneto supervisory lamps on your right as you face rear of SB–249/TTC or SB–1398/GTA–14(V).

c. Remove half disk fasteners from magneto supervisory lamps, lower magneto supervisory lamps, and resecure with half disk fasteners.

d. Install trunk unit above magneto supervisory lamps and secure with half disk fasteners.

e. Release dial from keyshelf; retain two wood screws.

NOTE

The wires that come directly from the dial have colors according to a predetermined code, but the wires connected to them may be different in different switchboards.

f. Before disconnecting dial wires, tag each wire to identify color of dial wire to which it was connected and a terminal number according to following listing.

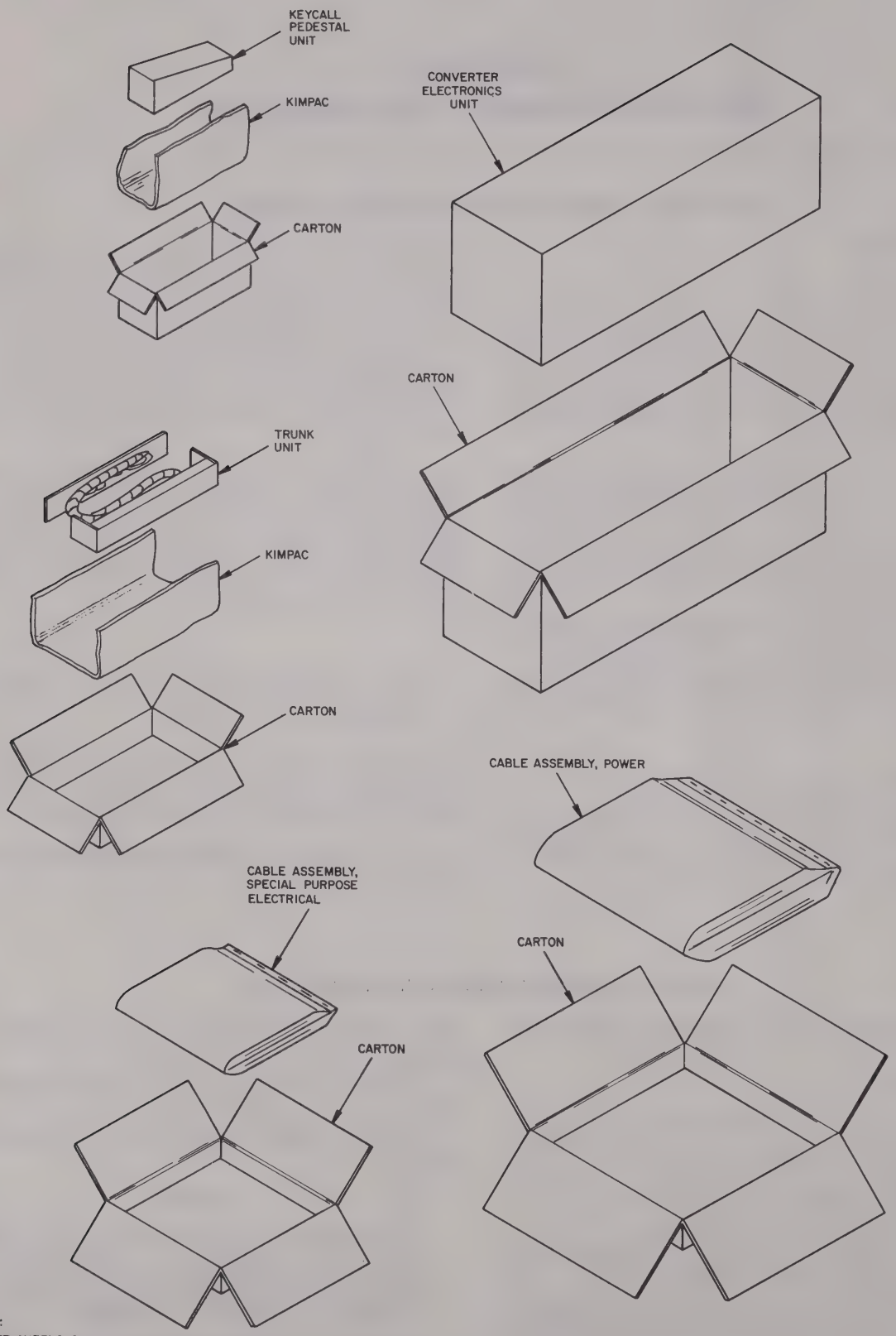


Figure 2-1. ①. Packing diagram (sheet 1 of 3).

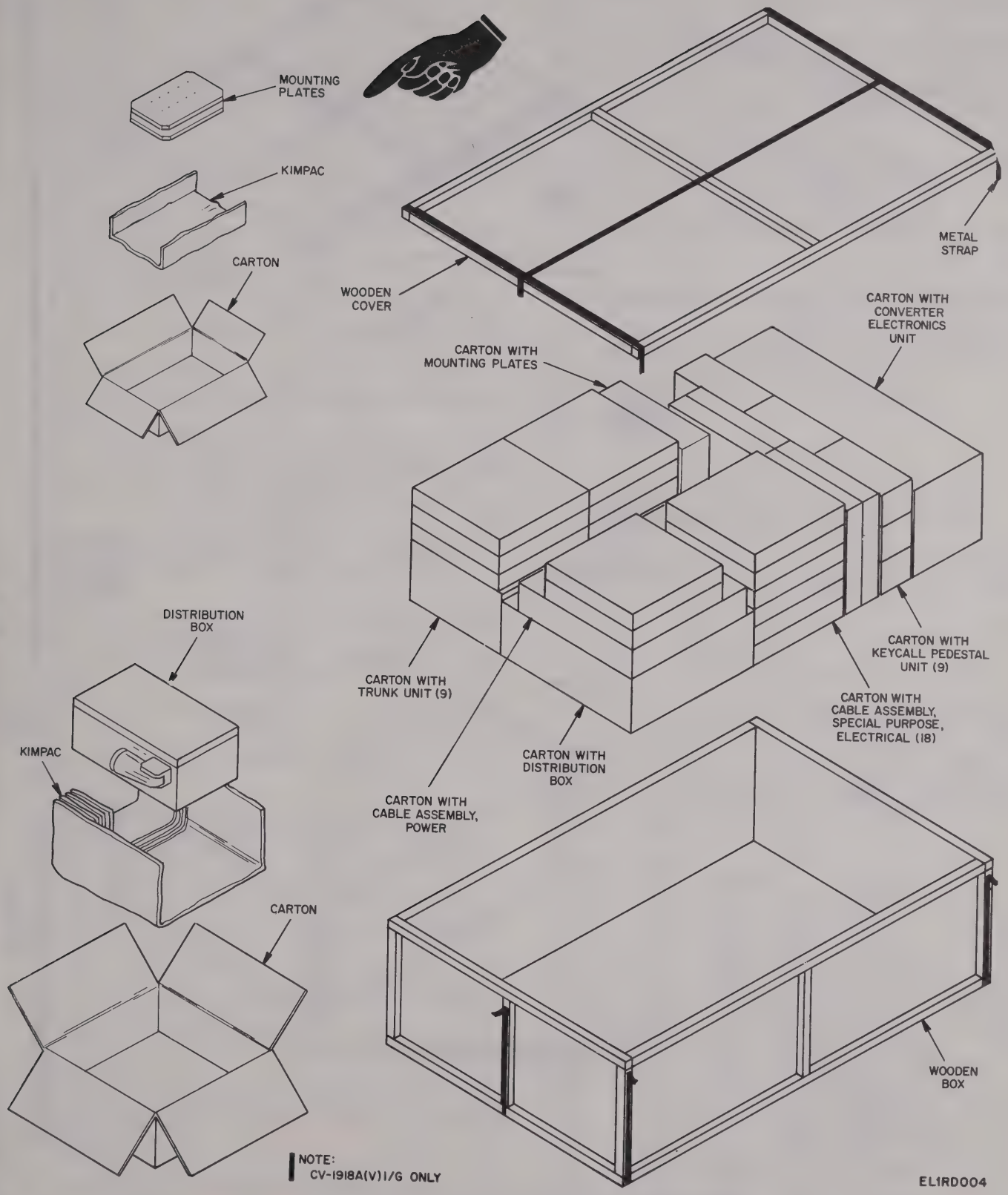


Figure 2–1. ② Packing diagram (sheet 2 of 3).

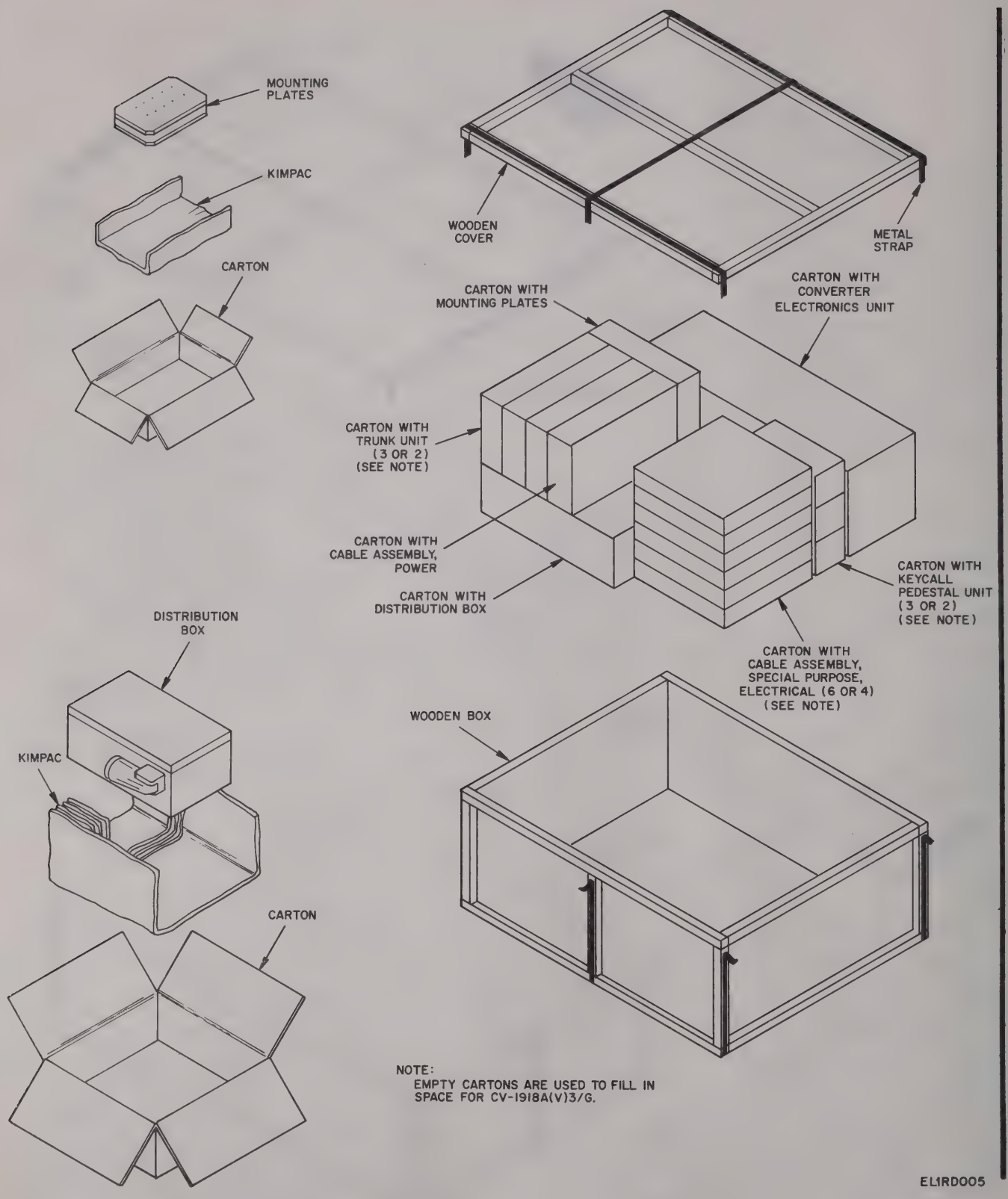


Figure 2-1.③ Packing diagram (sheet 3 of 3).

Color of dial wire	*New terminal number*
Red	6
Brown	7
White	8
Green	9

g. Disconnect harness wires from dial wires.

h. Remove two screws (retain for reuse) and lift keyshelf to stop position of slide-type hinge; check to see that tagged wires still protrude through hole.

i. Feed loose wires of trunk unit wiring harness toward front of SB–249/TTC or SB–1398/GTA–14(V) through access port under keyshelf.

j. Solder loose, single, brown wire of trunk unit wiring harness to common connection of ring answer/dial switches (lowest right-hand pin).

k. Draw loose end of trunk unit wiring harness through same hole through which tagged wires protrude.

l. Lower and secure keyshelf.

m. Position keycall pedestal unit on keyshelf over dial hole.

n. Open keycall pedestal unit and connect original tagged dial wires and trunk unit wiring harness to barrier strip in accordance with figure 2–3.

NOTE

The mounting holes in the keycall plate align with the original dial mounting holes in the keyshelf.

o. Secure keycall plate to keyshelf with two wood screws that secured original dial.

p. Close keycall unit and secure with two captive screws.

q. At rear of the SB–249/TTC or SB–1398/GTA–14(V), remove two mounting screws from lowest CB–LB line cable receptacle panel at side near operator's panel.

r. Align slotted holes of trunk unit connector left-hand bracket with mounting holes of CB–LB line cable receptacle panel and hold in place with screws just removed, but do not tighten screws.

s. Remove two mounting screws from lowest CB–LB line cable receptacle panel at side near rear of SB–249/TTC or SB–1398/GTA–14(V).

t. Align slotted holes of trunk unit connector right-hand bracket with mounting holes and hold in place with screws just removed.

u. Tighten all four screws to secure trunk unit connector plate.

v. Check to see that screws and half disk fasteners that secure trunk unit and magneto supervisory lamps are tight.

2–4. Installing Converter Electronics Unit

(fig. 2–2)

a. Bolt converter electronics unit to universal mounting plate.

b. Remove four screws from top of SB–249/TTC or SB–1398/GTA–14(V) that align with holes in mounting plate.

c. Place converter electronics unit with mounting plates on top of one SB–249/TTC or SB–1398/GTA–14(V) (now denoted as first operator position), so that lightning arresters, power indicator, and ON-OFF switch face away from operator.

d. Secure converter electronics unit mounting plates with hardware just removed from top of SB–249/TTC or SB–1398/GTA–14(V).

e. Attach facility ground wire to wingnut GND terminal.

2–5. Installing Distribution Box J–1077(*)/U

The J–1077(*)/U required no special installation instructions. It is wired to supplement the existing boxes in accordance with the tactical situation.

2–6. Cabling

CAUTION

Long field wires are subject to lightning strikes; do not connect or disconnect signal lines during lightning conditions.

a. Connect existing Telephone Cable Assembly CX–2584/U from main distribution box to converter electronics unit connector J21.

b. Check system wiring information for channel send and receive connections.

c. Loosen captive fasteners and raise lightning arrester cover for access to minipatch barrier strips.

d. Refer to following tabulation for prewired channel send and receive connections, and rewire minipatch barrier strips if wiring configuration of converter electronics unit connector J21 does not agree with installed system wiring information.

Connect J21 pin No.	*Barrier strip*	*Marking*	*Circuit*
1 (W)	TB2	S1A	Channel 1 Send
2 (W)	TB2	S1B	Channel 1 Send
3 (W)	TB3	S3B	Channel 3 Send
4 (W)	TB2	R1A	Channel 1 Receive
5 (W)	TB2	R1B	Channel 1 Receive
6 (W)	TB2	S2A	Channel 2 Send
7 (W)	TB2	S2B	Channel 2 Send
8 (W)	TB2	R2A	Channel 2 Receive
9 (W)	TB2.	R2B	Channel 2 Receive
9 (W)	TB3	S3A	Channel 3 Send
11 (W)	TB3	R3A	Channel 3 Receive
12 (W)	TB3	R3B	Channel 3 Receive
13 (W)	TB3	S4A	Channel 4 Send
14 (W)	TB3	S4B	Channel 4 Send
15 (W)	TB3	R4A	Channel 4 Receive
16 (W)	TB6	33	See note
17 (W)	TB3	R4B	Channel 4 Receive
18 (W)	TB6	35	See note
19 (W)	TB6	36	See note
20 (W)	TB6	37	See note

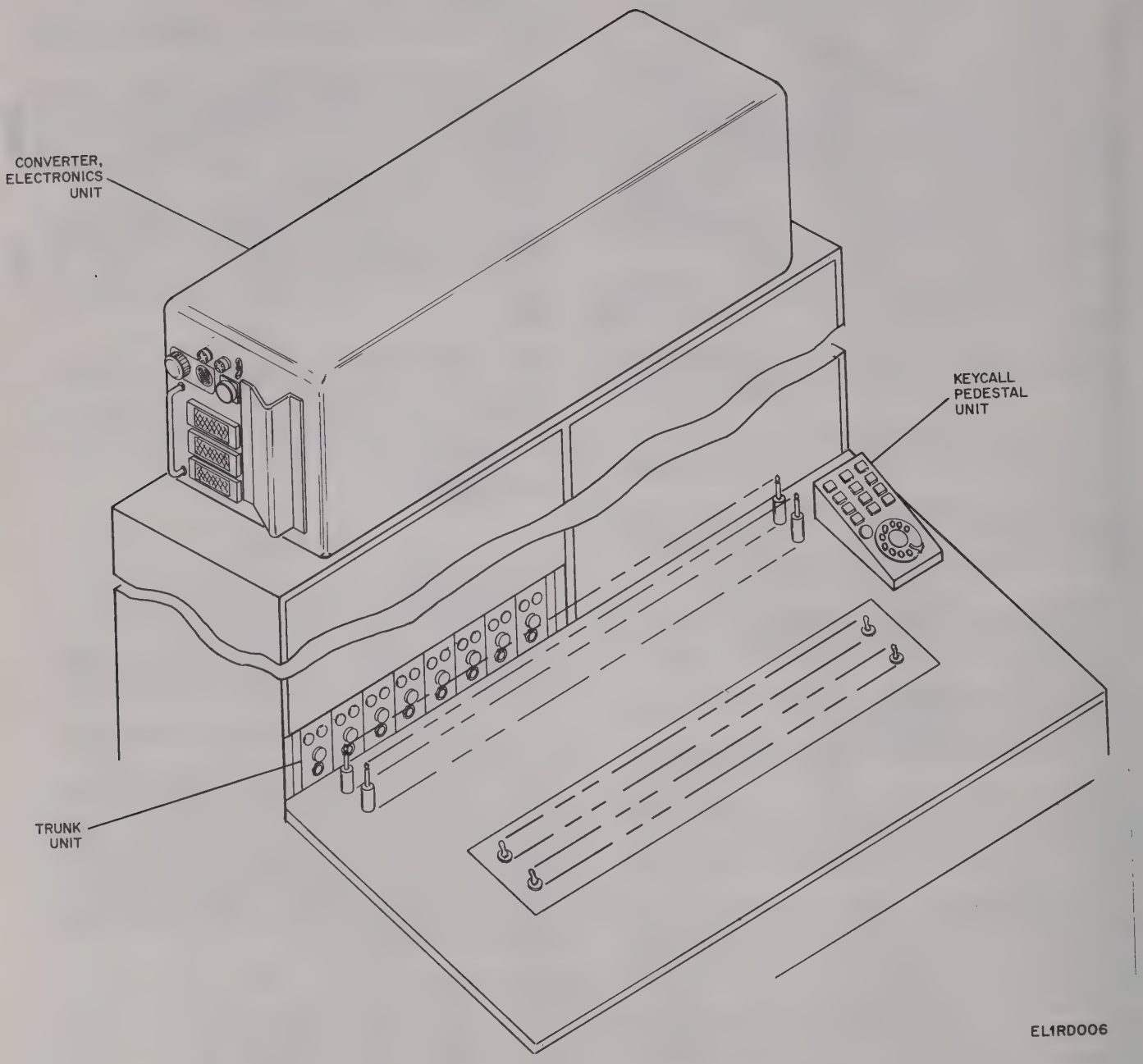


Figure 2–2. CV–1918A(V)(*)/G installed on SB–249/TTC or SB–1398/GTA–14(V), first operator position.

Connect J21 pin No.	*Barrier strip*	*Marking*	*Circuit*
21 (W)	TB6	38	See note
22 (W)	TB6	39	See note
23 (W)	TB6	40	See note
24 (W)	TB4	S6B	Channel 6 Send
25 (W)	TB6	41	See note
26 (W)	TB6	42	See note
27 (W)	TB4	S5A	Channel 5 Send
28 (W)	TB4	S5B	Channel 5 Send
29 (W)	TB4	R5A	Channel 5 Receive
30 (W)	TB4	R5B	Channel 5 Receive
31 (W)	TB4	S6A	Channel 6 Send
32 (W)	TB4	R6A	Channel 6 Receive
33 (W)	TB4	R6B	Channel 6 Receive
34 (W)	TB5	S7A	Channel 7 Send
35 (W)	TB5	S7B	Channel 7 Send
36 (W)	TB5	R7A	Channel 7 Receive
37 (W)	TB6	34	See note
38 (W)	TB5	R7B	Channel 7 Receive
39 (W)	TB5	S8A	Channel 8 Send
40 (W)	TB5	S8B	Channel 8 Send

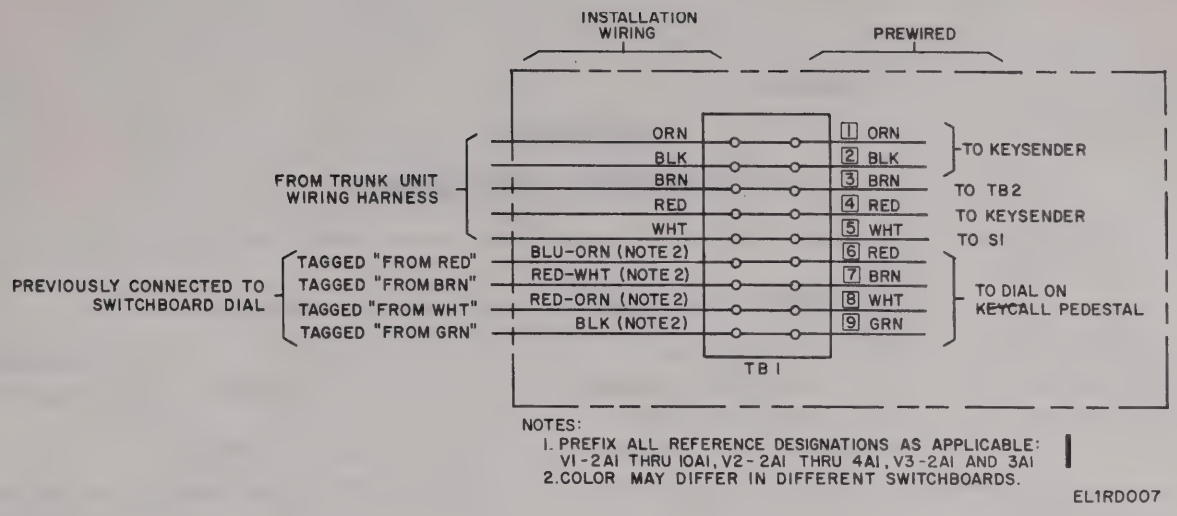


Figure 2–3. Wiring keycall pedestal unit.

Connect J21 pin No.	*Barrier strip*	*Marking*	*Circuit*
41 (W)	TB5	R8A	Channel 8 Receive
42 (W)	TB5	R8B	Channel 8 Receive
43 (W)	TB6	43	See note
44 (W)	TB6	44	See note
45 (W)	TB6	52	See note
46 (W)	TB6	45	See note
47 (W)	TB6	46	See note
48 (W)	TB6	47	See note
49 (W)	TB6	48	See note
50 (W)	TB6	49	See note
51 (Br)	TB6	50	See note
52 (R)	TB6	51	See note

Note

Terminated at insulated terminal or ground required.

NOTE

The SB–249/TTC or SB–1398/GTA–14(V) on which the converter electronics unit is installed is called the first position (para 2–4).

e. Connect one CX–2584/U from converter electronics unit connector J19 to first position trunk unit connector J9.

f. Connect one CX–2584/U from converter electronics unit connector J20 to first position trunk unit connector J10.

g. Connect one CX–2584/U from first position trunk unit connector J9 to second position trunk unit connector J9, and another from second position to third position, if any, etc, until all trunk units are parallel-connected.

h. Connect one CX–2584/U from first position trunk unit connector J10 to second position trunk unit connector J10, and another from second position to third position, etc, until all trunk units are parallel-connected.

i. Connect electrical power cable assembly W19 from converter electronics unit connector J22 to 48V power connector near bottom at rear of SB–249/TTC or SB–1398/GTA–14(V).

2–7. Installation Check

Refer to TM 11–2146 and place outgoing call for each channel as follows:

a. Place the CV–1918(V) (*)/G converter electronics unit power ON-OFF switch to ON position.

b. Insert answer cord into subscriber's line on SB–249/TTC or SB–1398/GTA–14(V).

c. Move ring call/talk switch to talk position.

d. Plug call cord into trunk unit jack and observe that BY indicator glows.

e. Move ring answer/dial switch to dial position.

f. Press SEIZE pushbutton on keycall pedestal and listen for 570–Hz acknowledge tone.

g. Release SEIZE pushbutton and listen for dial tone.

h. Key digits of called party using the keysender on the keycall pedestal.

i. Move ring answer/dial switch to normal position.

j. When ringback is heard return ring call/talk switch to normal, press RELEASE pushbutton; then return answer cord and call cord to normal positions.

CHAPTER 3
OPERATING INSTRUCTIONS

Section I. OPERATION UNDER USUAL CONDITIONS

3–1. Controls
(fig. 3–1, 3–2, and 3–3)

NOTE

There are no combinations of control settings that may physically damage the CV–1918A(V)(*)/G.

a. General. The following charts describe the controls, indicators, and connectors on the CV–1918A(V)(*)/G trunk unit, keycall pedestal unit, and converter electronics unit.

b. Trunk Unit Front Panel Controls (fig. 3–1).

Control, indicator, or connector	*Function*
SR (indicator lamp)	Glows when remote switchboard requests service.
BY (indicator lamp)	Glows when channel is in use.
RELEASE (pushbutton switch)	Enables 2600-Hz oscillator which initiates release sequence from AN/TTC-38(V)(*).
Jack	Provides access for answer or call cords from SB–249/TTC.

c. Keycall Pedestal Front Panel Controls (fig. 3–2).

Control, indicator, or connector	*Function*
SEIZE (pushbutton switch)	Enables 2250–Hz oscillator which initiates seize sequence.
Keysender (12 pushbuttons)	Permits keying multifrequency tones (DTMF) into AN/TTC–38(V)(*).
Dial	Permits dialing into dial input switchboards.

d. Converter Electronics Unit (fig. 3–3).

Control, indicator, or connector	*Function*
NIGHT ALARM (audible alarm device)	Sounds when an incoming service request occurs and NIGHT ALARM OFF-LOUD volume control is not in the OFF position.
NIGHT ALARM OFF-LOUD (volume control)	Adjusts volume level of NIGHT ALARM from full OFF to LOUD.
J22 (electrical connector)	Provides connection for primary power (48 vdc).
J21 (electrical connector)	Provides connection of external trunk line wires.
J20 (electrical connector)	Provides interconnect to trunk unit.
J19 (electrical connector)	Provides interconnect to trunk unit.
ON-OFF (toggle switch)	Turns primary power on or off.
Power indicator	Glows to indicate application of primary power.

3–2. Starting Equipment

a. Place the converter electronics unit power ON-OFF switch ON.

b. Check to see that the associated local switchboards (SB–249/TTC or SB–1398/GTA–14(V)) are properly energized in accordance with TM 11–2146.

3–3. Night Alarm

The NIGHT ALARM is an audible signal used to supplement the visual incoming service request (SR) indicator. The NIGHT ALARM can be turned off by rotating the NIGHT ALARM OFF-LOUD volume control fully counterclockwise. When the NIGHT ALARM is activated the loudness can be set by rotating the NIGHT ALARM OFF-LOUD volume control clockwise to the desired audio intensity level. Operating instructions refer to the visual SR indicator only. If the NIGHT ALARM OFF-LOUD volume control is on, the NIGHT ALARM will sound simultaneously with the setting of the visual SR indicator.

3–4. Operating Procedure

a. Connecting Call (Originated by Remote Switchboard).

(1) When SR indicator glows on a trunk unit, insert an answer cord from the switchboard into trunk unit jack on channel requesting service (SR indicator goes out and BY indicator glows).

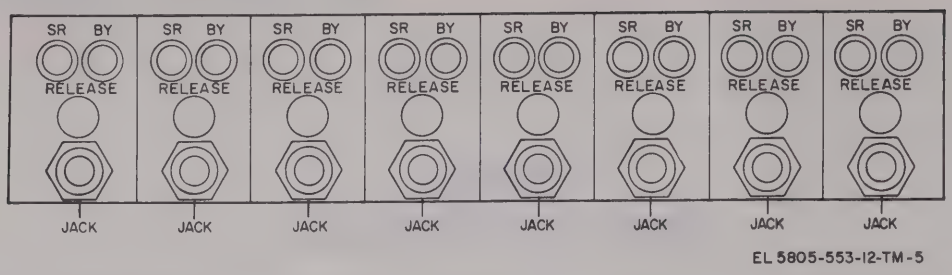


Figure 3–1. Operator controls, indicators, and connectors, trunk unit.

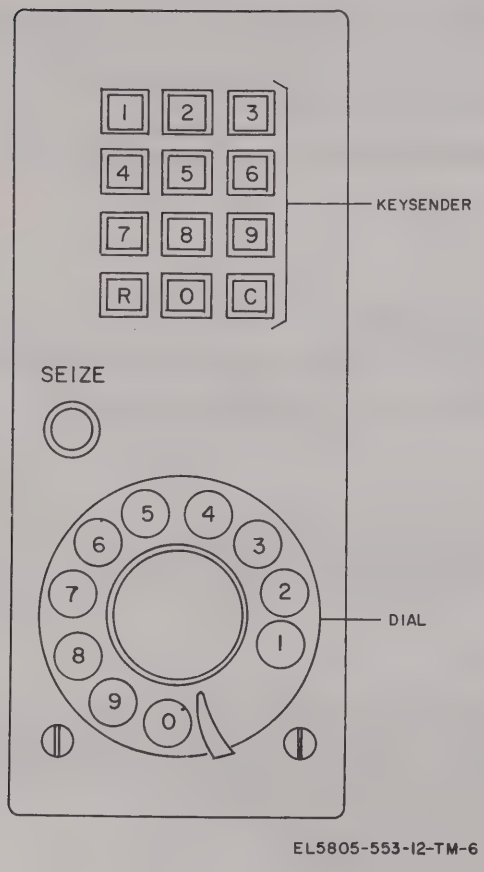


Figure 3–2. Operator controls, keycall pedestal unit.

(2) Place the ring call/talk switch in the talk position.

(3) Determine called party and insert the call cord into called party's line jack (call supervisory lamp glows).

(4) Place ring call/talk switch in ring call position.

(5) When subscriber picks up telephone, the call supervisory lamp goes out.

b. Connecting Call (Originated by Local Switchboard).

(1) Plug answer cord from switchboard into subscriber's line jack above glowing subscriber's indicator (indicator goes out).

(2) Place ring call/talk switch in talk position, and determine called party.

(3) Plug call cord into applicable trunk unit jack (BY indicator glows).

(4) Place ring answer/dial switch in dial position.

(5) Press SEIZE pushbutton on keycall pedestal unit (570–Hz acknowledge tone is audible).

(6) Release SEIZE pushbutton and listen for dial tone.

(7) Key digits of called party using the keysender on the keycall pedestal unit.

(8) Place ring answer/dial switch in normal position.

(9) When ringback is heard, return ring call/talk switch to normal.

c. Disconnecting Call (Terminated by Remote Switchboard).

(1) Observe that call supervisory lamp glows.

(2) Return answer cord and call cord to normal positions.

d. Disconnecting Call (Terminated by Local Switchboard).

(1) Observe that answer supervisory lamp glows.

(2) Press RELEASE pushbutton on trunk unit.

(3) Return answer cord and call cord to normal positions.

e. Pre-Empting Call.

(1) Observe that both the answer supervisory lamp on local switchboard and the SR indicator unit glow.

(2) Place ring call/talk switch to talk position.

(3) Return subscriber's call cord to normal position.

(4) Pull out and then immediately reinsert answer cord into jack (SR indicator on trunk unit goes out and answer supervisory lamp goes out).

(5) Refer to procedure in *a* above to connect call.

3–5. Turn-off Procedure

a. See that all cords are returned to normal positions.

b. Place power ON-OFF switch at OFF.

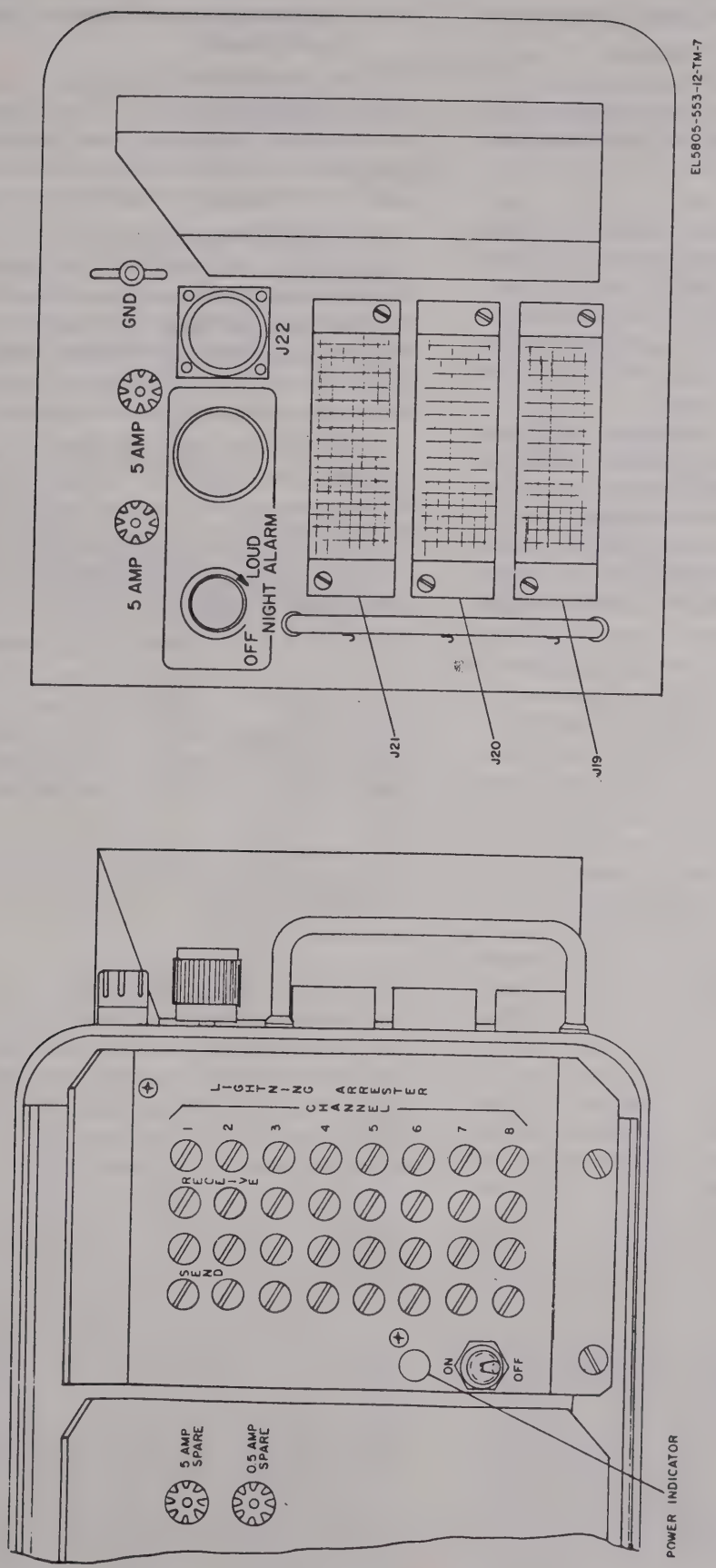


Figure 3-3. Operator controls, indicators, and converter electronics unit.

Section II. OPERATION UNDER UNUSUAL CONDITIONS

3–6. Operation Under Emergency Conditions

a. General. Some emergency conditions do not require complete shutdown of the CV–1918A(V)(*)/G. A channel loss or DTMF tone loss results in limited operation. Procedures to be followed for these emergency conditions are presented in the following subparagraphs.

b. DTMF Tone Key Inoperative. Failure of a tone key on the keysender of the keycall pedestal unit prevents completion of calls requiring the specific faulty digit. All other calls using DTMF tones can be completed. If a complete tone circuit fails, calls may still be completed to those switchboards capable of operation with dial input.

c. Channel Failure. Each channel operates independently; therefore, a failure of one channel will result in loss only to the trunk line attached to that channel. If an inoperative channel has higher priority than an operating channel, the printed wiring boards of the inoperative channel can be replaced by the printed wiring boards from the operational lower priority channel.

3–7. Operating Under Extreme Environmental Conditions

The CV–1918A(V)(*)/G is capable of operation in hot, cold, or moderate climates. The shelter facility provides complete protection from the elements for personnel and equipment; however, under extreme conditions, the following precautions are necessary.

a. Cold Climates. Extreme cold causes cables to become hard, brittle, and difficults to handle. Be careful when handling the cables and connecting them to the equipment, so that kinks and unnecessary loops will not result in permanent damage. Make sure that all connectors are free of frost, snow, and ice. Never drag or place an open connector in the snow.

b. Hot climates. In hot, dry climates, connectors and receptacles are subject to damage from dust or dirt. Never place an open connector on the ground.

c. Warm, Damp Climates. In warm, damp climates, the equipment is subject to damage from moisture and fungi. Wipe all moisture and fungi from the equipment with a lint-free cloth.

CHAPTER 4
FUNCTIONING OF EQUIPMENT

4–1. General

This chapter provides a block diagram analysis of Telephone Signal Converter CV–1918A(V)(*)/G to the circuit card level. Circuit description includes the interface between the 4-wire Automatic Telephone Central Office AN/TTC–38(V)(*) and the 2-wire manual Telephone Switchboard SB–249/TTC or SB–1398/GTA–14(V).

4–2. Block Diagram Analysis
(fig. 4–1)

a. The CV–1918A(V)(*)/G consists of one converter electronics unit, and as many trunk units and keycall pedestal units as there are switchboard positions.

b. The trunk unit (mounted on each SB–249/TTC or SB–1398/GTA–14(V)) provides connection of up to eight 2-wire switchboard circuits that require interfacing for operation into the AN/TTC–38(V)(*) 4-wire automatic switchboard. The front panel contains SR (service request) indicators, BY (busy) indicators, RELEASE pushbuttons, and access jacks for the eight circuits.

c. The keycall pedestal unit (mounted on each SB–249/TTC or SB–1398/GTA–14(V)) provides the operator with the dual-tone multiple frequency (DTMF) keysender, a SEIZE pushbutton and a dial unit.

d. The converter electronics unit contains eight sets of identical circuits for the eight channels and a common circuit. Calls may originate at either the local 2-wire switchboard or the remote 4-wire switchboard.

(1) When a call originates at the 4-wire switchboard, a 2250-Hz seize tone is sent over the receive pair of the 4-wire trunk line to one of the channel circuits in the CV–1918A(V)(*)/G. The channel circuit detects the seize tone, activates the SR indicator on the trunk unit for the associated channel, and gates on the 570-Hz acknowledge tone from the common circuit. The acknowledge tone is routed over the send pair of the 4-wire trunk to the remote switchboard where it terminates the seize tone. When the seize tone stops, the CV–1918A(V)(*)/G generates a 425-Hz interrupted ringback tone in the common circuit which is routed through the channel circuit and sent back over the send pair of the 4-wire trunk to the AN/TTC–38(V)(*). The ringback tone continues until the operator at the local 2-wire switchboard plugs an answer cord into the trunk unit channel jack of the channel requesting service. When the answer cord is plugged into the channel jack, the SR indicator goes out, the BY indicator on the trunk unit lights, and the 425-Hz ringback tone stops. The operator then determines the desired subscriber and inserts the call cord from the 2-wire switchboard into the subscriber's jack.

(2) When the call is terminated by the 4-wire switchboard, the 2600-Hz release tone from the 4-wire switchboard activates the applicable channel release circuit which then turns on the applicable trunk unit SR, and gates through the 570-Hz release acknowledge tone generated in the common circuit. The release acknowledge is sent over the send pair to the 4-wire switchboard where it terminates the release tone. When the release tone stops, the channel circuit stops sending the acknowledge tone. When the operator disconnects from the trunk unit, the BY lamp and the SR lamp are extinguished.

(3) When a call originates at the 2-wire local switchboard, the operator selects an unused channel on the CV–1918A(V)(*)/G, and plugs in a call cord from the switchboard causing the trunk unit channel BY indicator on all trunk units for the associated channel to light. The operator then presses the SEIZE pushbutton on the keycall pedestal unit. The 2250-Hz seize tone generated in the common circuit is routed through the channel circuit and over the send pair of the 4-wire trunk to the remote switchboard. The remote switchboard returns a 570-Hz seize acknowledge tone which terminates the seize tone from the CV–1918A(V)(*)/G. The end of seize tone causes the AN/TTC–38(V)(*) to return a dial tone. When the operator hears the dial tone, he presses the required digits on the keysender of the keycall pedestal unit. The tones for the digits are routed through the channel circuit and over the send pair of the 4-wire trunk to the AN/TTC–38(V)(*). When the connection is completed, the operator can disconnect from the circuit.

(4) When a call is terminated at the 2-wire local switchboard, the operator momentarily presses the RELEASE pushbutton on the trunk unit channel to be released. The 2600-Hz release tone generated in the common circuit is routed through the channel circuit and over the send pair of the 4-wire trunk to the remote switchboard. When the AN/TTC–38(V)(*) receives the release tone it returns a 570-Hz acknowledge tone to the CV–1918A/G, stopping the release tone and extinguishing the BY indicator lamp.

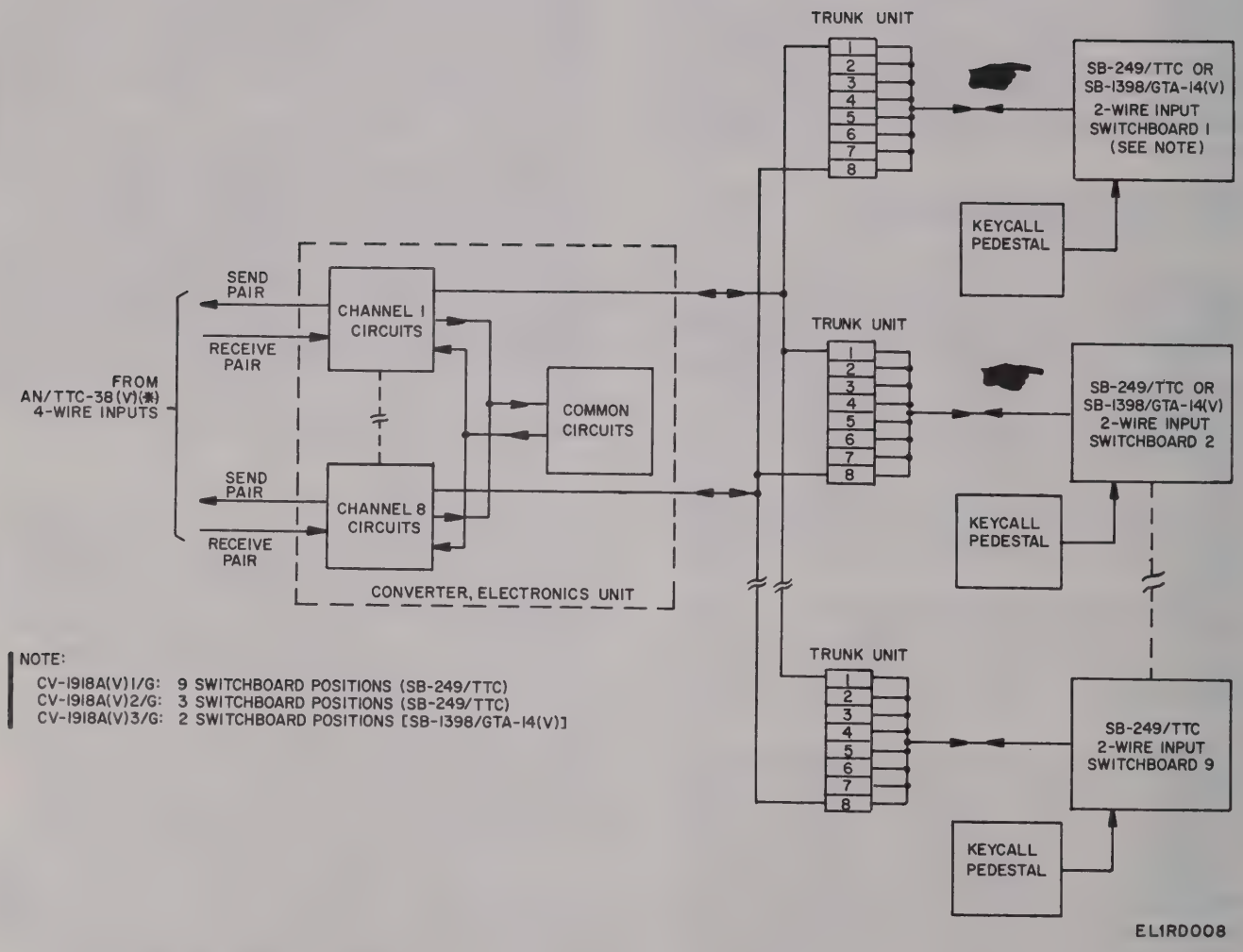


Figure 4-1. CV-1918A/G, block diagram.

CHAPTER 5
OPERATOR AND ORGANIZATIONAL MAINTENANCE INSTRUCTION

Section I. TOUCHUP PAINTING INSTRUCTIONS

5–1. Paints and Finishes

CAUTION

Before painting, carefully mask all unpainted and vented surfaces and nameplates, decals, MWO information and other markings.

The front panel and keycall pedestal final paint film is smooth, semigloss enamel, black color number 27038 conforming to FED-STD-595 as listed in SB11–573. The case final paint film is smooth, semigloss enamel, green color number X24087 conforming to fed-STD-595 as listed in SB 11–573. Finish for hardware such as handles, hinges, screws, etc. is in accordance with MIL–F–14072.

5–2. Painting Procedures

Refer to TB 43–0118 for instructions on painting and preserving electronics equipment.

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

5–3. Scope of Maintenance

a. General. Preventive maintenance is the systematic care, servicing and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to maintain the equipment in serviceable condition.

(1) Operator preventive maintenance is performed daily as specified in procedures provided in paragraph 5–4.

(2) Organizational preventive maintenance is performed monthly and quarterly as specified in procedures provided in paragraphs 5–5 and 5–6.

(3) Defective items that cannot be corrected must be reported to higher category maintenance personnel. Records and reports of repairs and preventive maintenance must be made in accordance with procedures given in TM 38–750.

b. Preventive Maintenance Checks and Services Periods. Preventive maintenance checks and services for an operating CV–1918A(V)(*)/G are required daily (para 5–4), monthly (para 5–5), and quarterly (para 5–6). These checks and services must be performed during the specified periods. In addition, the daily checks and services must be performed under the following special conditions:

(1) When the equipment is initially installed.

(2) When the equipment is reinstalled after removal for any reason.

(3) At least once each week if the equipment is maintained in a standby condition.

c. Cleaning.

WARNING

The fumes of the trichloroethane are toxic. Provide thorough ventilation whenever used. Do not use near open flame, as any fumes are converted to highly toxic gases.

(1) Use a dry, lint-free cloth or brush to remove dust or dirt. If necessary, moisten the cloth or brush with trichloroethane (National Stock No. 6810–00–292–2625). After cleaning wipe, dry with a clean cloth.

WARNING

Compressed air is dangerous and can cause serious harm. It can also cause mechanical damage to the equipment. Do not use compressed air to dry parts where trichloroethane has been used.

(2) Dry compressed air, not to exceed 60 pounds per square inch, may be used to remove dirt and dust from inaccessible places.

d. Touchup Painting.

(1) Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper.

(2) Brush two thin coats of paint on bare metal to protect it from further corrosion. Refer to paragraph 5–1 for paint specifications.

e. Replacing Lamps.

(1) To reach lamps, use lamp cap extractor (WECO No. 70 or equivalent) and remove lens from defective lamp.

(2) Use lamp extractor (WECO No. 553A or equivalent) and remove defective lamp.

(3) Use lamp extractor to install replacement lamp and check to see that lamp is seated firmly.

(4) Reinstall lens.

NOTE

If the equipment must be kept in continuous operation, check and service only those items that can be checked and serviced without disturbing operation; make the complete checks and services when the equipment can be shut down. Check fuses and replace as necessary before reporting defective items to higher category maintenance personnel.

5–4. Operator's Daily Preventive Maintenance Checks and Services

Sequence No.	Item to be inspected	Procedure	References
1	Exterior surfaces	Inspect for chips and scratches in the paint.	Para 5–3*a*(2)
2	Grounding system	Clean. See that facility ground wire is secure at GND terminal.	Para 5–3*c*
3	Connections	*a.* See that wires are secure in minipatch barrier strip terminals under lightning arrester cover.	None
		b. See that connector plugs are secure on side of connector electronics unit and trunk unit connector panel.	None
4	Audible alarm	Request an incoming call anc check that audible NIGHT sounds. Turn OFF/LOUD control to check change of volume.	Para 5–3*a*(2)
5	Audible alarm control	See that audible NIGHT Alarm control does not bind.	Para 5–3*a*(2)
6	Indicators	*a.* Request an incoming call and see that SR indicator glows.	Para 5–3*e*
		b. Repeat for each of 8 channels.	Para 5–3*e*
7	Pushbuttons	*a.* See that SEIZE pushbutton on each keycall pedestal unit does not bind.	Para 5–3*a*(2)
		b. See that RELEASE pushbuttons on trunk unit do not bind.	Para 5–3*a*(2)

5–5. Organizational Monthly Preventive Maintenance Checks and Services

The monthly checks and services include those performed daily (para 5–4) and the following items.

Sequence No.	*Item to be inspected*	*Procedure*	*References*
1	Plug-in boards	See that plug-in boards are properly seated.	None.
2	Lightning arrestor cover	*a.* Check for damage	Para 5–3*a*(2)
		b. Check hinge for smooth operation.	Para 5–3*a*(2)
		c. Check captive screws for damage.	Para 5–3*a*(2)

5–6. Organizational Quarterly Preventive Maintenance Checks and Services

The quarterly checks and services include those performed daily (5–4), monthly (para 5–5), and the following items.

Sequence No.	*Item to be inspected*	*Procedure*	*References*
1	Modification work orders	Check to see if any MWO's are required. Check to see if current MWO's have been applied and MWO number is stamped as required.	DA Pam 310–7
2	Hardware	Check, tighten, and replace as necessary.	None.

APPENDIX A
REFERENCES

DA Pam 310–4	Index of Technical Manuals, Technical Bulletins, Supply Manual (Types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310–7	US Army Equipment Index of Modification Work Orders.
SB 11–573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment.
SB 700–20	Army Adopted/Other Items Selected for Authorization/List of Reportable Items.
TB 43–0118	Field Instructions for Painting or Preserving Electronics Command Equipment Including Camouflage Pattern Painting of Electrical Equipment Shelters.
TM 11–2146	Central Office, Telephone, Manual AN/TTC–7 and AN/TTC–7A; Telephone Central Office Group, Manual AN/GTA–14(V).
TM 11–5805–284–15	Operator's, Organizational, Direct Support, General Support, and Depot Maintenance Manual Including Repair Parts Lists: Central Office, Telephone, Manual AN/MTC–1 and AN/MTC–1A.
TM 11–5805–288–15	Operator's, Organizational, Direct Support, General Support, and Depot Maintenance Manual Including Repair Parts and Special Tool Lists: Central Office, Telephone, Manual AN/MTC–9.
TM 11–5805–391–15	Operator, Organizational, Direct Support, General Support, and Depot Maintenance Manual Including Repair Parts and Special Tool Lists: Central Office, Telephone, Manual AN/TTC–23.
TM 11–5905–628–12	Operator's and Organizational Maintenance Manual: Automatic Telephone Central Offices AN/TTC–38(V)1 and AN/TTC–38(V)2.
TM 38–750	The Army Maintenance Management System (TAMMS).
TM 740–90–1	Administrative Storage of Equipment.
TM 750–244–2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command).

APPENDIX B

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

B-1. Scope

This appendix lists repair parts and special tools required for the performance of organizational maintenance of the CV-1918A/G.

B-2. General

This repair parts list is divided into the following sections:

a. Basic Issue Items List—Section II. Not applicable.

b. Items Troop Installed or Authorized List—Section III. Not applicable.

c. Repair Parts List—Section IV. A list of repair parts authorized at the organizational level for the performance of maintenace.

d. Special Tools List—Section V. Not applicable.

e. Federal Stock Number and Reference Number Index—Section VI. Not applicable.

B-3. Explanation of Columns

The following provides an explanation of columns found in the tabular listings.

a. Source, Maintenance, and Recoverability Codes (SMR).

(1) *Source code.* Source codes are assigned to support items to indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows.

Code	*Definition*
PA—	Item procured and stocked for anticipated or known usage.
PB—	Item procured and stocked for insurance purposes because essentiality dictates that a minimum quantity be available in the supply systems.

NOTE

Cannibalization or salvage may be used as a source of supply for any items source coded above except those coded XA, XD, and aircraft support items as restricted by AR 700-42.

(2) *Maintenance code.* Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

(a) *Use (third position).* The maintenance code entered in the third position indicates the lowest maintenance level authorized to remove, replace, and use the support item. The maintenance code entered in the third position will indicate one of the following levels of maintenance:

Code	*Application/Explanation*
O—	Support item is removed, replaced, used at the organizational level of maintenance.

NOTE

A code "C" may be used in this position to denote crew or operator maintenance performed within organizational maintenance.

(b) *Repair (fourth position).* The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform conplete repair (i.e., all authorized maintenance functions). This position will contain one of the following maintenance codes.

Code	*Application/Explanation*
F—	The lowest maintenance level capable of complete repair of the support item is direct support.
Z—	Nonrepairable. No repair is authorized.

(3) *Recoverability code.* Recoverability codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the Uniform SMR Code format as follows:

Code	*Explanation*
Z—	Nonrepairable item. When unserviceable, condemn and dispose at the level indicated in the first digit of the maintenance code.
F—	Repairable item. When uneconomically repairable, condemn and dispose at the direct support level.
D—	Repairable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.

b. Federal Stock Number. Indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

NOTE

For requisitioning purposes, the Federal stock number must be converted to the National stock number by adding "-00-" after the Federal supply classification (FSC) code (first four digits). For example, FSN 6625-553-0142 converts to NSN 6625-00-553-0142.

c. Description. Indicates the Federal item name and a minimum description required to identify the item. The last line indicates the reference number followed by the applicable Federal Supply Code for Manufacturer (FSCM) in parentheses. The FSCM is used as an element in item identification to designate manufacturer or distributor or Government agency, etc., and is identified in SB 708-42.

d. Unit of Measure (U/M). Indicates the standard or basic quantity by which the listed item is used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr, etc.), and is the basis used to indicate quantities and allowances in subsequent columns. When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

e. Quantity Incorporated in Unit. Indicates the quantity of the item used in the breakkout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly.

f. 15-Day Organizational Maintenance Allowances.

(1) The repair parts indicated by an asterisk in the allowance columns represent those authorized for use at the organizational category and will be requisitioned on an "as required" basis until stockage is based on demand in accordance with AR 710-2.

(2) Major Army commanders are authorized to approve reduction in range of support items authorized for use in units within their commands. Recommendation for increase in range of items authorized for use will be forwarded to the Commander, US Army Electronics Command, ATTN: AMSEL-MA-C, Fort Monmouth, NJ 07703. Any changes approved will be reflected in a revision to the RPSTL.

g. Illustration. This column is divided as follows:

(1) *Figure Number.* Indicates the figure number of the illustration on which the item is shown.

(2) *Item Number.* Indicates the callout number used to reference the item on the illustration.

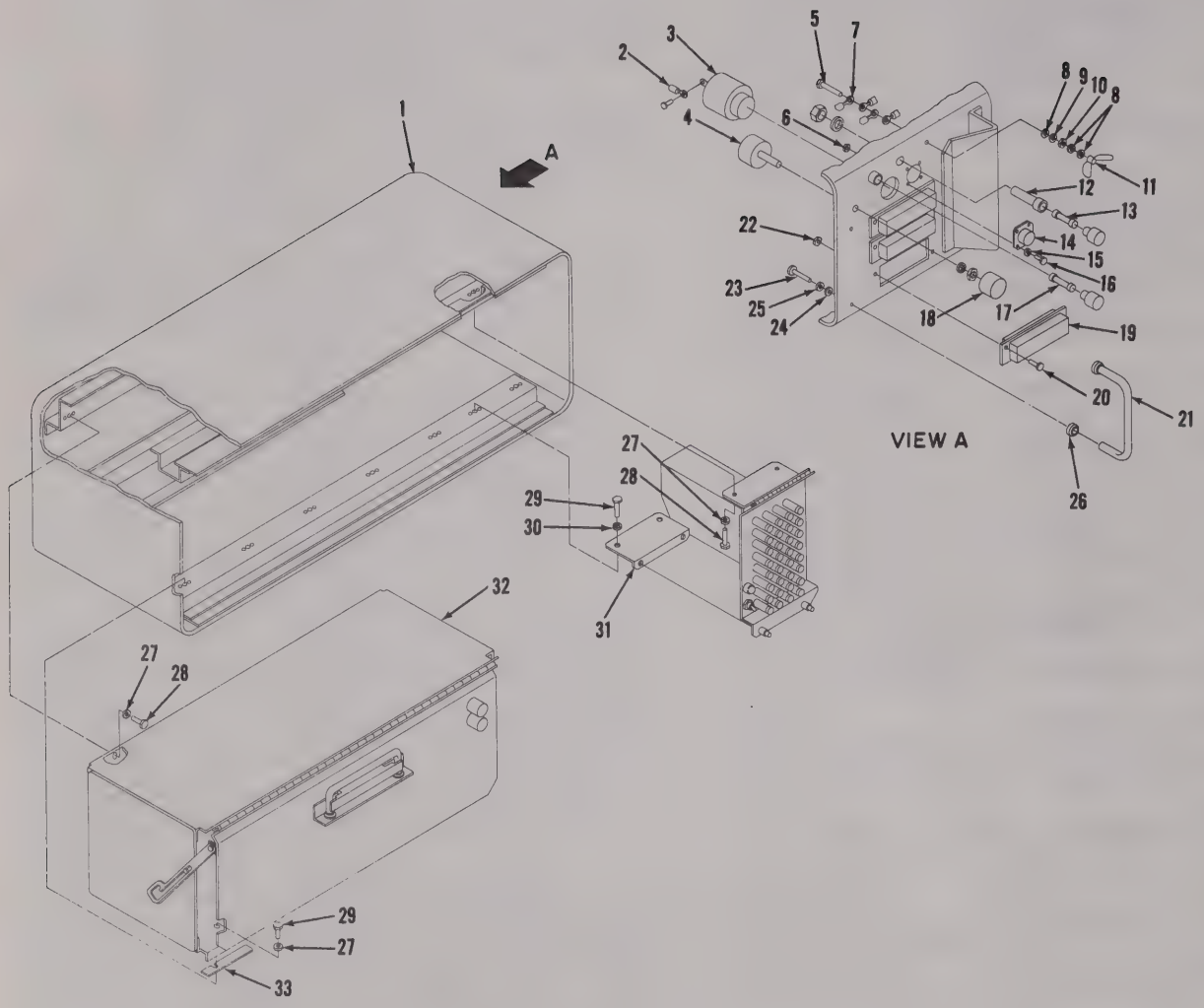
B-4. Special Information

Not applicable.

(Next printed page is B-5)

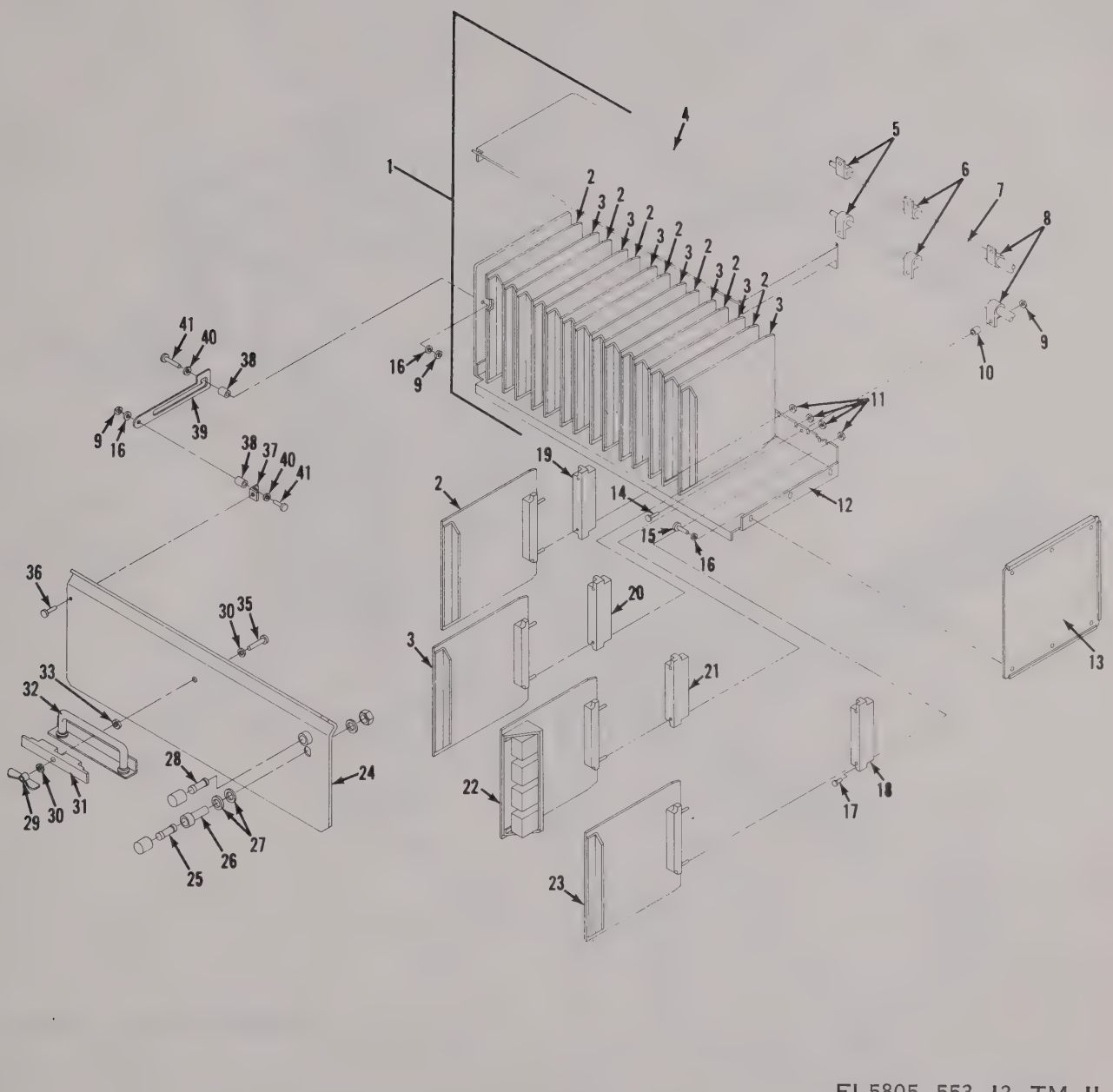
SECTION IV. REPAIR PARTS FOR ORGANIZATIONAL MAINTENANCE

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER & MFR CODE	USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 15-DAY ORGANIZATIONAL MAINTENANCE ALW (a) 1-5	(b) 6-20	(c) 21-50	(d) 51-100	(7) ILLUSTRATIONS (a) FIGURE NO.	(b) ITEM NO.
PAOFD	5805-192-9866	CONVERTER, TEL SIG CV-1918A/G CV-1918A/G (80058)									
		GROUP 01 CONVERTER, TELEPHONE SIGNAL UNIT 1									
PAOFD		CONVERTER, TELEPHONE SIGNAL SMD 743539 (04655)	1	EA	1	*	*	*	*	B-1	
PAOZZ	5805-431-0341	EXTRACTOR ASSEMBLY SMC2016004 (04655)		EA	1	*	*	*	*	B-2	32
PAOZZ	5920-518-1789	FUSE, CARTRIDGE F03A250V5AS (81349)	1A11F1	EA	1	*	*	*	*	B-1	17
PAOZZ	5920-518-1789	FUSE, CARTRIDGE F03A250V5AS (81349)	1A11F1SPARE	EA	1	*	*	*	*	B-2	28
PAOZZ		FUSE, CARTRIDGE F03A250V1-2AS (81349)	1A11F2	EA	1	*	*	*	*	B-1	13
PAOZZ		FUSE, CARTRIDGE F03A250V1-2AS (81349)	1A11F2SPARE	EA	1	*	*	*	*	B-2	25
PAOZZ	6240-153-6515	LAMP, INCANDESCENT MS15609-6 (96906)	1A11DS1	EA	1	*	*	*	*	B-3	13
PAOZZ	6210-689-7618	LENS, LIGHT PJ156 (70674)		EA	1	*	*	*	*	B-3	14
PAOZZ		PROTECTOR, TELEPHONE SMD2015983 (04655)	1A11E1-E32	EA	32	*	*	*	*	B-3	11
		GROUP 03 TRUNK UNIT ASSEMBLY UNIT 12 THROUGH 20									
PAOFF		TRUNK UNIT ASSEMBLY, CV-1918A/G SMD743572 (04655)	12-20	EA	9	*	*	*	*	B-4	
PAOZZ	6240-153-6515	LAMP, INCANDESCENT MS15609-6 (96906)	12-20A1DS1-16	EA	16	*	*	*	*	B-4	27
PAOZZ	6210-760-8322	LENS, LIGHT PJ154 (70674)		EA	8	*	*	*	*	B-4	28
PAOZZ	6210-689-7618	LENS, LIGHT PJ156 (70674)		EA	8	*	*	*	*	B-4	26
		GROUP 04 JUNCTION BOX AND CABLES									
PAOFF		CABLE ASSEMBLY, POWER SMC743588 (04655)	W19	EA	1	*	*	*	*		
PAOZZ	5995-284-6353	CABLE ASSEMBLY TELEPHONE CX2584AU (80058)	W1-W18	EA	18	*	*	*	*		
PBOFF		JUNCTION BOX, MODIFIED J1077AU (80058)	21	EA	1	*	*	*	*		



EL5805-553-12-TM-10

Figure B-1. Converter, telephone signal, unit 1.



EL5805—553—12—TM—11

Figure B-2. Frame and connector assembly.

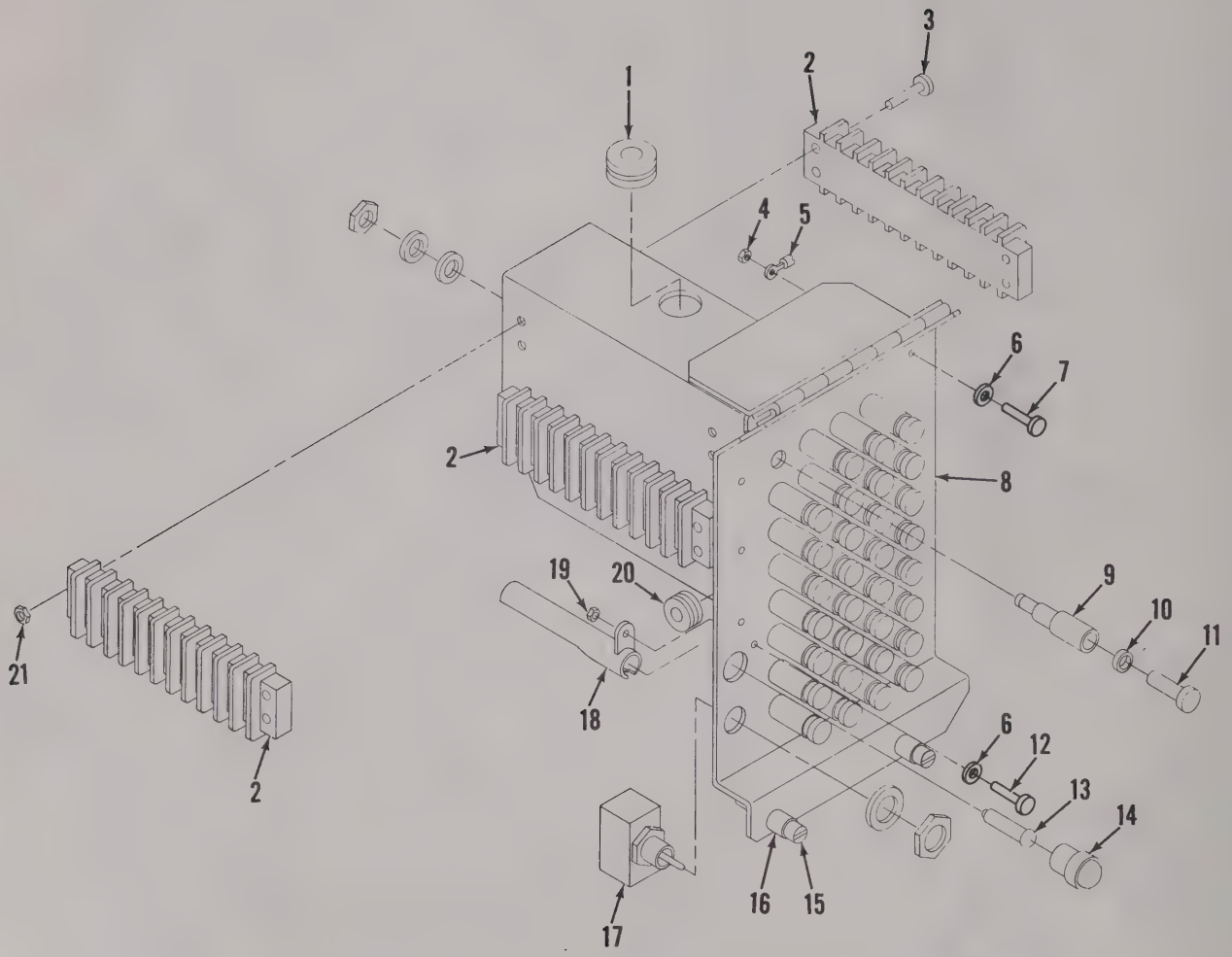
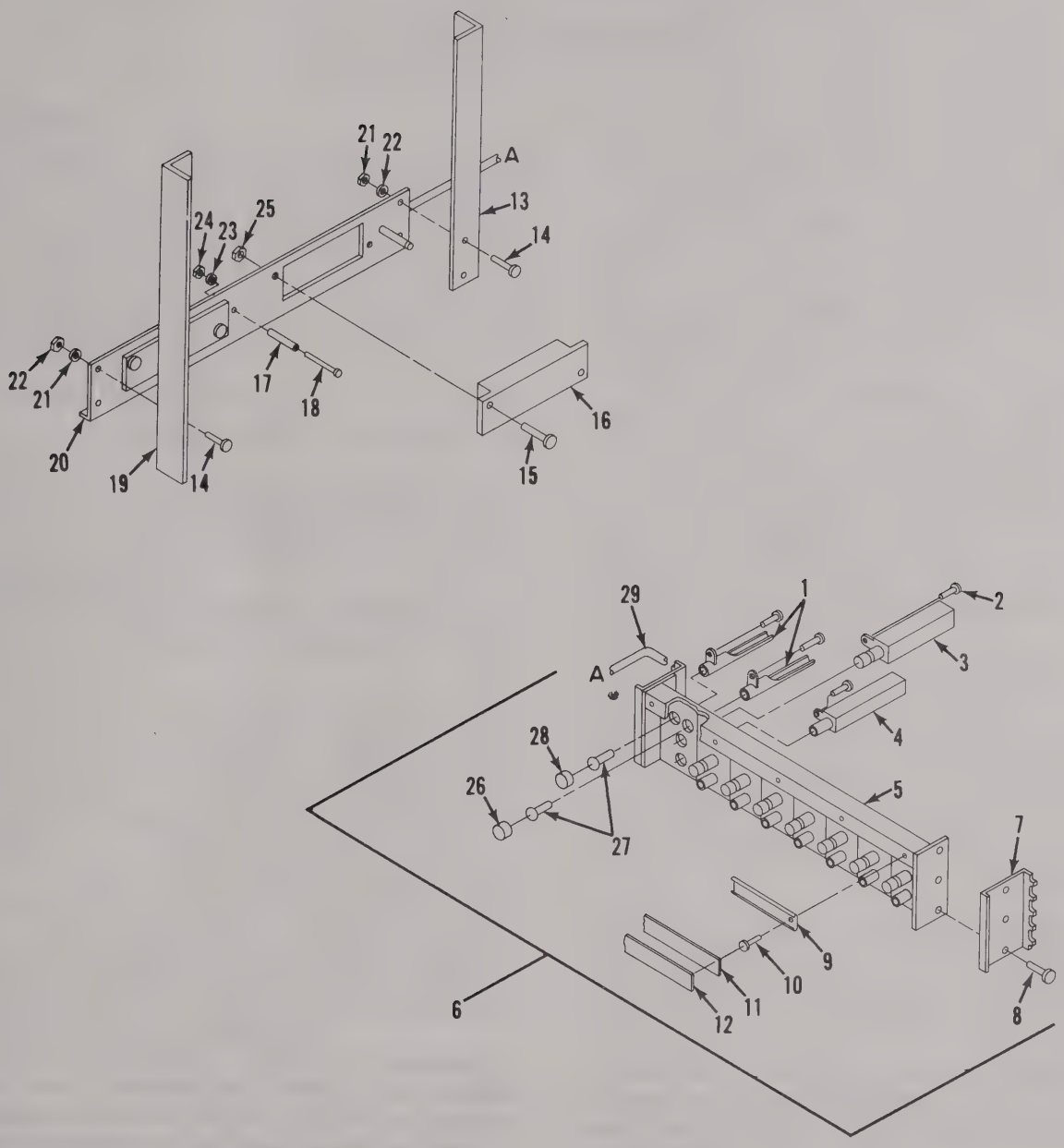


Figure B-3. Lightning protector unit.



EL5805—553—12—TM—13

Figure B-4. Trunk unit assembly.

APPENDIX C

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

C-1. General

This appendix provides a summary of the maintenance operations covered in the equipment literature. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

C-2. Maintenance Functions

Maintenance functions shall be limited to and defined as follows:

a. Adjust. Maintain within prescribed limits by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

b. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

c. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

d. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

e. Install. The act of emplacing, seating, or fixing into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment/system.

f. Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (e.g., DMWR) in pertinent technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like-new condition.

g. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like-new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipment/components.

h. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other material activities (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly module/component/assembly, end item or system.

i. Replace. The act of substituting a serviceable like-type part, subassembly, module (component or assembly) in a manner to allow the proper functioning of an equipment/system.

j. Service. Operations required periodically to keep an item in proper operating condition; i.e., to clean, preserve, drain, paint or to replenish fuel/lubricants/hydraulic fluids or compressed air supplies.

k. Test. To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

l. Symbols. The uppercase letter placed in the appropriate column indicates the lowest level at which that particular maintenance function is to be performed.

C-3. Explanation of Format

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to match components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Functional Group. Column 2 lists the next higher assembly group and the item names of the components, assemblies, subassemblies and modules within the group for which maintenance is authorized.

c. Column 3, Maintenance Function. Column 3 lists the twelve maintenance functions defined in paragraph C-2 above. Each maintenance function required for an item shall be specified by the symbol among those listed in *d* below which indicates the level responsible for the required maintenance. Under this symbol there shall be listed an appropriate work measurement time value determined as indicated in *e* below.

d. Use of Symbols. The following symbols shall be used to prescribe work function responsibility:

C—Operator/crew
O—Organization
F—Direct support
H—General support
D—Depot

e. Work Measurement Time. The active repair time required to perform the maintenance function shall be included directly below the symbol identifying the category of maintenance. The skill levels used to obtain the measurement times shall approximate those found in typical TOE units. Active repair time is the average aggregate time required to restore an item (subassembly, assembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, fault isolation/diagnostic time, and QA/QC time in addition to the time required to perform specific maintenance functions identified for the tasks authorized in the maintenance allocation chart. This time will be expressed in man-hours and carried to one decimal place (tenths of hours).

f. Column 4, Tools and Equipment. This column shall be used to specify, by code, those tools and test equipment required to perform the designated function.

g. Column 5, Remarks. Self-explanatory.

C-4. Explanation of Format of Table I (Tool and Test Equipment Requirements)

The columns in table I are as follows:

a. Tools and Equipment. The numbers in this column coincide with the numbers used in the tools and equipment column of the maintenance allocation chart. The numbers indicate the applicable tool for the maintenance function.

b. Maintenance Category. The codes in this column indicate the maintenance category normally allocated the facility.

c. Nomenclature. This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

d. Federal Stock Number. This column lists the Federal stock number of the specific tool or test equipment.

e. Tool Number. Not used.

SECTION II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY NOMENCLATURE	(3) MAINTENANCE FUNCTION: INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD	(4) TOOLS AND EQUIPMENT	(5) REMARKS
	CONVERTER, TELEPHONE SIGNAL CV-1918A/G	C 0.2		C 0.2						C 0.1			1, 2, 11	Replace lamps, fuses, and lightning arrestors.
								O 2.0					11	
										F 1.0			3 thru 11	All other repairs except printed circuit boards.
										D 2.0			3, 4, 6, 9 thru 17	Printed circuit boards.
											D 5.0		1 thru 4, 6 thru 17	
	01 CONVERTERS, ELECTRONICS UNIT	C 0.1		C 0.1										
			F 0.2										3 thru 8, 11	
									F 0.2				11	
										C 0.1			1, 2, 11	Replace lamps, fuses, and lightning arrestors.
										F 1.0			3 thru 11	Replace circuit cards and chassis wiring and parts.
0101	ELECTRONICS UNIT CHASSIS									C 0.1			1, 2	Replace lamps, fuses and lightning arrestors.
										F 1.0			3 thru 11	Replace circuit cards and chassis wiring and parts.
010101	LAMPS, FUSES, LIGHTNING ARRESTORS								C 0.1				1, 2, 11	
010102 thru 010109	CIRCUIT CARD, CHANNEL ANALOG								F 0.1				8, 11	
										D 2.0			3, 4, 6, 9 thru 17	

SECTION II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY NOMENCLATURE	(3) MAINTENANCE FUNCTION: INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD	(4) TOOLS AND EQUIPMENT	(5) REMARKS
010110 thru 010117	CIRCUIT CARD, CHANNEL LOGIC								F 0.1				8, 11	
										D 2.0			3, 4, 6, 9 thru 17	
010118	CIRCUIT CARD, TONE GENERATOR								F 0.1				8, 11	
										D 2.0			3, 4, 6, 9 thru 17	
010119	CIRCUIT CARD, COMMON REGULATOR								F 0.1				8, 11	
										D 2.0			3, 4, 6, 9 thru 17	
	02 KEYCALL PEDESTAL ASSEMBLY	C 0.1		C 0.1										
			F 0.2										3, 4, 11	
									F 0.1				11	
										F 0.5			3, 4, 11	Replace circuit card and chassis mounted parts.
0201	CHASSIS MOUNTED PARTS								F 0.5				3, 4, 11	
0202	CIRCUIT CARD, OSCILLATOR								F 0.3				11	
										D 2.0			3, 4, 6, 9 thru 17	

SECTION II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	FUNCTIONAL GROUP (2) COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION (3)											(4) TOOLS AND EQUIP-MENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	03 TRUNK UNIT ASSEMBLY	C 0.1		C 0.1										
									F 0.5				11	
										C 0.1			1, 2	Replace lamps.
			F 0.3							F 0.5			3, 11	All other repairs.
	04 JUNCTION BOX AND CABLES	C 0.1		C 0.1										
									O 0.2					
										F 0.5			9, 10, 11	All repairs.

TABLE I. TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
1	C,D	LAMP EXTRACTOR WECO 553A	5120-293-1950	
2	C,D	CAP EXTRACTOR UTICA B-327	5120-293-1085	
3	F,D	MULTIMETER TS-352B/U	6625-553-0142	
4	F,D	OSCILLOSCOPE AN/USM-281A	6625-228-2201	
5	F	TELEPHONE SET TA-341A/TT	5805-910-8844	
6	F,D	ATTENUATOR TS-402( )/U	6625-230-5149	
7	F,D	EXTENDER BOARD P/N 210099; FMC 15412		
8	F,D	CARD PULLER SMC-2016004	5805-431-0341	
9	F,D	EXTRACTION TOOL 465199-1	5120-085-5092	
10	F,D	CRIMPING TOOL 90083	5102-954-8187	
11	O,F,D	TOOL KIT TK-105/G	5180-610-8177	
12	D	OSCILLATOR, AUDIO TS-421C/U	6625-669-0228	
13	D	COUNTER, ELECTRONIC, DIGITAL READOUT AN/USM-207	6625-911-6368	
14	D	POWER SUPPLY, HEWLETT PACKARD 6200B	4931-463-4638	
15	D	WAVE ANALYZER, HEWLETT PACKARD 302A	6625-806-5929	
16	D	VOLTMETER, DIGITAL AN/GSM-64	6625-970-2204	
17	D	METER, DBM/DBA; CONSOLIDATED ELECTODYNAMICS MODEL 11		

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29–36
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NG: None
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For explanation of abbreviations used, see AR 310–50.

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